(671)

RESEARCH REPORT SERIES

New Series No. 10

AN ANALYSIS OF THE PROFITABILITY OF THE JUTE MANUFACTURING INDUSTRY OF BANGLADESH IN THE POST-LIBERATION PERIOD

by

Qazi Kholiquzzaman Ahmad

BANGLADESH INSTITUTE OF DEVELOPMENT ECONOMICS
ADAMJEE COURT, MOTIJHEEL COMMERCIAL AREA, DACCA-2
BANGLADESH

New Series No. 10

AN ANALYSIS OF THE PROFITABILITY OF THE JUTE MANUFACTURING INDUSTRY OF BANGLADESH IN THE POST-LIBERATION PERIOD

by

Qazi Kholiquzzaman Ahmad

June 1973

Bangladesh Institute of Development Economics,
Adamjee Court, Motijheel Commercial Area,
Dacca-2, BANGLADESH.

PLAN OF THE PAPER

I. Introduction

II. The Methodology and the Data

III. Performance of the Industry During July-December 1972

IV. Cost Levels, Cost Structures and Exercises in Cost Reduction

V. Ways of Cost Reduction

VI. Costs, Profitability, Export Prices and the Exchange Rate

VII. Concluding Remarks.

June, 1973

AN ANALYSIS OF THE PROFITABILITY OF THE JUTE MANUFACTURING INDUSTRY OF BANGLADESH IN THE POST-LIBERATION PERIOD

by

QAZI KHOLIQUZZAMAN AHMAD*

I. INTRODUCTION

The jute manufacturing industry, which was nationalised along with other industries soon after liberation, is the most important industry of Bangladesh both in terms of production and employment and in terms of foreign exchange earnings. However, it is now well known that the industry has been suffering losses since liberation. This study has been undertaken to evaluate the performance of the industry during July-December 1972 (i) to provide an estimate of losses incurred, (ii) to analyse the causes therefor and (iii) to discuss possible ways of improving the performance of the industry. July-December 1972 has been chosen as the reference period because relevant data are available for this period and it is believed that these months would represent the general post-liberation situation in the industry.

---

* The author is a Research Economist at the Bangladesh Institute of Development Economics. He is thankful to Dr. M. Alamgir and Mr. Abu Ahmed Abdullah, a Senior Research Economist and a Research Economist respectively at the Institute for reading the first draft of the paper and suggesting improvements. However, the sole responsibility for any errors and inadequancies in the paper rests with the author alone. Research Assistance provided by Mr. Dilip Kumar Roy and Mr. Karimullah Bhuiyan, both Assistant Staff Economists at the Institute, is gratefully acknowledged. Thanks are also due to officials of Bangladesh Jute Mills Corporation (BJMC) and Bangladesh Jute Mills Association (BJMA), whose kind cooperation made collection of data for this study possible.

II. THE METHODOLOGY AND THE DATA

METHODOLOGY

Operating profit (loss) during any period (t) is defined as the excess (shortfall) of the value of sales out of production during t over (from) the cost of these sales. Per unit operating profit or loss is an useful concept as, given the demand conditions, it reflects production efficiency in t.

To compute the total profit earned or loss incurred in t, receipts from total sales in t are to be matched against total costs associated with the sales. In the computation of total cost of sales, the question of adjustment for opening and closing stocks comes in[1]. Total cost of goods sold in t are given by total cost incurred for production, administration and selling purposes in t plus cost of goods carried over from the previous period (t-1) incurred in t-1 minus cost of goods carried forward to the following period (t+1)[2].

In the jute manufacturing industry of Bangladesh which is

---

1. The evaluation of costs of stocks carried over from t-1 and sold in t in terms of cost in t-1 makes a significant impact on total profit (loss) in t when costs are significantly different between t and t-1 and the stocks involved are large.

2. The concepts of cost of production, cost of goods produced and cost of sales (i.e. goods sold), as used in this paper, have the following meaning. Cost of production consists of material and conversion costs and does not include (normal) profit; cost of goods produced means cost of production plus administrative expenses (i.e. expenses incurred in head office, fees paid to managing agents etc.); and cost of sales includes selling expenses in addition (to cost of production and administrative expenses).

an export industry with a negligible domestic market[3], the profitability mainly depends on the export price realised (foreign demand conditions) and the cost of sales. As will be seen later, it is the unusually increased cost of sales since liberation that is mainly responsible for the difficulties of the industry. Losses were incurred inspite of the very high prices charged. Hence, in seeking out the reasons for the difficulties of the industry, the main focus will be on the supply conditions. Cost reduction possibilities will be explored by reference to 1969-70[4] costs allowing for exogenous cost push changes that took place since then but assuming the same productive efficiency and capacity utilization level[5] as well as by working out cost reduction implications of increased output levels. Foreign demand conditions will also be examined to derive estimates of export prices which may promote exports to desired levels. Cost levels will be related to these computed export prices to explore the question of the exchange rate vis-a-vis the viability of the industry.

---

3. During July-December 1972, domestic sales accounted for just over 3% of hessian production, about 11% of sacking production and no carpet backing.

4. 1969-70 is in common use as providing the norm for comparative evaluation of performance indicators during post-liberation period. 1969-70 was reasonably free from abnormalities. Besides, this is the only year for which we have relevant data.

5. In this paper, "capacity utilization" will be used to mean simply looms worked in relation to looms installed or, more precisely, loom hours worked in relation to loom hours available in a given time period. Productive efficiency reflects efficiency in the use of all the resources used.

SOURCE OF DATA

The main products of hessian, sacking and carpet backing are considered in this paper. The 'others', such as twine, cotton bagging etc., are not considered since relevant data for these products are not available. However, these are relatively unimportant products, accounting for only 5.3% of the total tonnage of output and much less in value terms during July-December 1972.

Required data for the period July-December 1972 have been compiled from monthly performance reports of mills available from Bangladesh Jute Mills Corporation (BJMC). At first we thought of random selection of a sample but that was not possible as reports from all the mills were not available and some of the available reports were not useable due to incompleteness. Hence the sample was dictated by the availability of data. However, fortunately, it has turned out that mills from all the three zones, viz., Dacca, Khulna and Chittagong, of all sizes and of good and not-so-good reputation for efficiency have found place in the sample. The sample consists of 22 mills, of which 2 are only carpet backing mills. Of the remaining 20 mills producing hessian and sacking, 11 mills also produced carpet backing which means that the number of mills in the sample producing carpet backing is 13. Regarding the quality of the data, it should be mentioned that their reliability may not be beyond doubt; but, we believe that generally their quality is reasonably good to yield useful conclusions.

The data for 1969-70 have been taken from returns of a survey of the jute manufacturing industry of Bangladesh undertaken by the present author in late 1970[6]. This sample is also dictated by data availability but here also mills from all the three zones, of all sizes and of different kinds of reputation for efficiency are included. The sample for 1969-70 consists of 12 mills, of which all the 12 provide data for hessian and sacking and 4 for carpet backing. As for quality, we believe these data are quite reliable as these were collected from mills directly.

The coverage of the two samples in respect of number of mills, installed loomage, output and export by product (i.e. in terms of the number of mills producing a particular product, the installed capacity for it and its output and export in the sample relative to the corresponding totals for the industry) has been shown in table 1.[7] An examination of the table suggests the conclusion that there is no excessive bias for any product, in any of the two samples, one way or the other in respect of size and productivity to vitiate their otherwise representative character.

---

6. For more about this survey see Ahmad, Q.K. "A Note on Capacity Utilization in the Jute Manufacturing Industry of Bangladesh"; The Bangladesh Ecoromic Review, Vol. 1, No. 1, January 1973; Footnote 7.

7. It may be pointed out here that basic data, obtained from sample surveys or otherwise, from which the tables in this paper have been prepared are given in the Appendix and, for the source of any table, reference may be made to relevant Appendix table or tables.

TABLE-1

COVERAGE OF THE SAMPLES FOR JULY-DECEMBER 1972 AND 1969-70 BY PRODUCT (IN PERCENT).

Reference period	Product-line	Percent of mills covered	Percent of inst-alled loomage covered	Percent of output covered	Percent of exports covered
July-December 1972	Hessian	38.5	39.7	46.9	47.7
	Sacking	38.5	39.8	45.4	40.1
	Carpet backing	40.6	37.3	40.0	35.0
1969-70	Hessian	26.7	27.6	28.1	28.8
	Sacking	26.7	27.2	27.4	28.7
	Carpet backing	33.3	36.6	34.0	30.3

III. PERFORMANCE OF THE INDUSTRY DURING JULY-DECEMBER 1972

As will be seen below, losses were incurred in all the three productlines during July-December 1972.

A. PER TON OPERATING RESULTS (LOSSES) IN THE PERIOD

Per ton operating results for export during July-December 1972 by product are shown in table 2. It will be seen that for all products substantial losses were incurred during the period under review, the greatest being in the case of hessian. The average per ton loss of about Taka 291 for all the products over a period of six months is a serious matter.

TABLE-2

PER TON OPERATING LOSS DUE TO EXPORT BY PRODUCT DURING JULY-DECEMBER 1972 (IN TAKA)

Product	Per ton cost of sale	Per ton value of sale	Per ton loss due to export
Hessian	4379.82	3932.19	447.63
Sacking	2835.61	2676.21	162.40
Carpet backing	5001.13	4819.71	174.60
Weighted* Average: Hessian & Sacking	3619.14	3312.01	307.13
Weighted* Average: Hessian, Sacking & Carpet backing	3803.70	3513.34	290.69

*Weights are proportional to quantities exported of different products.

Some quantities of hessian and sacking were also sold domestically during July-December 1972 - 3.7% and 14.7% of total sales of the two products respectively. The operating results in respect of domestic sales are shown in Table 3. For domestic sales also, losses were incurred for both hessian and sacking. Here also, the per ton loss was the larger in the case of hessian; and the average loss for hessian and sacking was Taka 105.24 per ton.

TABLE-3

PER TON OPERATING RESULTS FOR DOMESTIC SALES BY PRODUCT, JULY-DECEMBER 1972.

Product	Per ton cost of sales	Per ton value of domestic sales	Per ton loss due to domestic sales.
Hessian	4379.82	4157.28	222.54
Sacking	2835.61	2746.37	89.24
Average	3020.92	2915.68	105.24

B. AN ESTIMATE OF TOTAL LOSS INCURRED DURING THE PERIOD

As mentioned earlier, total profit or loss in the period will be obtained by matching total receipts from sales in the period against total cost of sales, the latter involving costing of goods sold out of current production as well as of goods sold out of stocks. Since direct information on costs of opening and closing stocks were not available, the following procedure has been followed here.

To be sure, selling expenses incurred in t should be associated with goods sold in t (which may include quantities carried over from t-1 and exclude quantities out of production in t which are carried forward as stocks to t+1). It is assumed that stocks carried over from t-1 will all be sold during t so that all stocks carried forward to t+1 will be out of production

in t (assuming sales in t are larger than stocks carried over from t-1). This assumption will allow us to divide total cost incurred in t for production and administrative purposes between sales out of production in t and stocks carried forward to t+1. To calculate the total cost of sales in t, we are, then, to add cost of stocks carried over from t-1 incurred in t-1 plus any cost incurred for them in t and total selling expenses incurred in t to the production and administrative expenses incurred in respect of goods sold out of production in t. If we now have an estimate of cost of goods produced in (t-1), we can compute the total cost of sales in t.

Table 4 shows export and domestic sales of hessian, sacking and carpet backing during July-December 1972. The table also shows how much of the total sales came out of stocks from the previous period and how much out of current production on the assumption that stocks carried over from the previous period were all sold during July-December 1972.

TABLE-4

SALES DURING JULY-DECEMBER 1972 AND THEIR SUPPLY DISTRIBUTION AS BETWEEN STOCKS CARRIED OVER FROM THE PREVIOUS PERIOD AND CURRENT PRODUCTION(IN TONS)

Product	Sales			Supply of sales	
	Export	Domestic	Total	Out of stocks	Out of current production
Hessian	75,252	2,764	78,016	53,355	24,661
Sacking	86,946	12,760	99,706	35,675	64,031
Carpet Backing	31,149	-	31,149	8,609	22,540
Total:	193,347	15,524	208,871	97,639	111,232

Now, to estimate the total loss incurred during July-December 1972, the one more requirement is the cost associated with stocks carried over from pre-July 1972. But, it has not been possible to assemble cost data for that period from any source. First, performance reports, particularly with cost data, for months prior to July 1972 are not generally available with BJMC. The very few cost figures that could be obtained appeared to be rather wild and could not, therefore, be used. Also, our efforts at collecting cost data for that period directly from mills were unsuccessful. We were, thus, left with no other choice but to make some intelligent guess about the required cost figures. Cost levels in the months prior to July-December 1972 could not possibly be lower than during July-December 1972, and perhaps were higher if anything, as would seem to be indicated by the following considerations. First, wage increase was effective since May 1, 1972. Secondly, the mar-ket price of jute was already more than Taka 50 per maund, the minimum price fixed with effect from October 1, 1972, since soon after liberation. Thirdly, the output level was lower even during April-June 1972 (38.3 thousand tons per month) than during July-December 1972 (39.9 thousand tons per month)[8]. Besides, the labour situation was certainly poorer in that period and the industry was in the

---

8. Ref: For April-June 1972, Monthly Jute Goods Statistics, July 1972 (BJMA) and for July-December 1972 Appendix table 2.

process of settling down under public management with new management personnel being appointed in different mills, creating adjustment problems in many cases. One possible lower cost element in that period was perhaps somewhat lower prices of spares, but this is unlikely to mean much in terms of total cost of sales. Indeed, cost levels must have been fantastically high during January-March 1972 only if for very low levels of production (18.4 thousand tons per month - ref: same as footnote 8). In view of the above considerations and to be somewhat conservative, the following two assumptions may be made about costs associated with goods carried over from that period. One, cost levels as of July-December 1972 are applicable to these goods and, second, cost levels associated with these goods are 10% higher than July-December 1972 levels. Accordingly, we obtain two estimates of total loss incurred during July-December 1972, as shown in table 5.

Our estimates show that total actual loss incurred during July-December 1972 was between Taka 549.48 lakh and Taka 927.38 lakh. Per installed loom per month, the loss was Taka 380.70-642.52 so that a mill of 250 looms, the most common size, was losing at the rate of Taka 0.95-1.61 lakh per month. This is certainly a tentative estimate, dependent for closeness to actual magnitude of loss incurred, to a large extent, on the validity of our assumptions regarding cost levels associated with sales out of stocks.

TABLE-5

ESTIMATES OF TOTAL LOSS INCURRED DURING JULY-DECEMBER 1972

Product	Receipts (in lakh Taka)			Costs (in lakh Taka)					Total Loss(in lakh Tk.)	
	From Exports	From domestic sales	Total	Associated with sales out of current production	Associated with sales out of stocks		Total		E_1 =Col.8- Col.4	E_2= Col.9 - Col.4
					At current cost levels	At 10% more than current cost levels	Col.5+ Col.6	Col.5+ Col.7		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Hessian	2,959.05	114.91	3,073.96	1,080.11	2,103.17	2,336.85	3,416.96	3,650.65	343.00	576.69
Sacking	2,326.86	350.44	2,677.30	1,815.67	1,011.60	1,112.76	2,827.22	2,928.43	149.97	251.13
Carpet backing	1,501.29	-	1,501.29	1,127.25	430.55	473.60	1,557.80	1,600.85	56.51	99.56
TOTAL LOSS:									549.48	927.38

IV. COST LEVELS, COST STRUCTURES AND EXERCISES IN COST REDUCTION

While the industry was earning reasonable profit in 1969-70 (table 13), it incurred substantial losses during July-December 1972, inspite of much higher export receipts relative to 1969-70, due to very high cost of sales, as can be seen from table 6. The detailed breakdown of costs for the two periods are given in Appendix tables 5 and 6, which will form

TABLE-6

COST OF SALES AND EXPORT RECEIPTS BY PRODUCT, 1969-70 AND JULY-DECEMBER 1972 (TAKA PER TON)

Product	Cost of Sales			Receipts from Exports[9]		
	1969-70	July-Dec. 1972	% increase during July-Dec., 1972.	1969-70	July-Dec. 1972	% increase during July-December 1972
Hessian	2546.08	4379.82	72.02	2876.64	3932.19	36.69
Sacking	1720.36	2835.61	64.33	1578.70	2673.21	69.33
Carpet backing	3004.15	5001.13	66.13	4095.87	4819.71	17.77
Weighted* Average	2172.44	3803.70	75.09	2325.31	3513.34	51.09

* Weights are proportional to quantities exported of different products

9. These figures include subsidies received in the form of bonus on exports in addition to fob values. Prior to liberation, the rupee-US dollar exchange rate was Rs. 4.76 to the dollar. But the export of jute manufactures, like many other mainly manufactured exports, was entitled to an export bonus which meant a much higher receipts from exports than fob prices, implying much higher effective exchange rates, depending on the ruling bonus and premium rates. After liberation, the export bonus scheme was withdrawn and the currency unit, renamed Taka, was devalued to be fixed at Tk.18.97 to the pound sterling, which implied a Taka - dollar rate of Tk.7.29 to the dollar. But now with the pound sterling floating relative to the dollar, the Taka - dollar rate rose to between Tk.7.5 - Tk. 7.7. The question of exchange rate will be discussed in section V.

the basis of cost reduction exercises carried out later in this section. It may be noted here that jute cost is the most important element of total costs of jute goods accounting for 40-48%, while wages and salaries account for about a quarter and the rest accounted for by other direct materials, over-heads and administrative and selling expenses.

There are two interrelated questions to be explored: 1. Why are cost levels in the post liberation period so high relative to 1969-70? 2. What possibilities exist for cost reductions? Obviously, the answer to the second question depends on the answer to the first. In so far as high cost levels are due to lower capacity utilization and poorer productive efficiency, possibilities of cost reduction should exist. But, there occurred certain exogenous changes in the cost conditions of the industry after liberation so that cost levels in this period would be much higher than in 1969-70 even if productive efficiency and capital utilization level remained the same. It will be interesting to consider the implications of these cost push elements in terms of 1969-70 cost levels.

IMPLIED COST INCREASES FROM 1969-70 LEVELS DUE TO EXOGENOUS FACTORS, PRODUCTIVE EFFICIENCY AND CAPACITY UTILIZATION LEVEL ASSUMED UNCHANGED

The main cost push elements may be enumerated as follows.

1. Higher prices of jute due to increased minimum price, effective from 1st October, 1972, from Taka 32, ruling also in

1969-70, to Taka 50 a maund[10] an increase of 56.25%. Jute cost of production, in fact, includes any other expenses, besides the price paid, incurred in connection with jute before its use in production, such as procurement expenses, storing expenses etc. Hence, assuming a proportional increase in these 'other' costs associated with jute[11] and the same conversion ratio of jute into finished goods produced in the two periods, jute cost per ton of goods produced in the post liberation period would be 56.25% higher than in 1969-70.

2. Higher wages and salaries due to adhoc raise with effect from May 1, 1972, as shown in table 7. The base wage/salary levels shown in the table were effective rates in 1969-70 also[12].

TABLE-7

WAGE/SALARY INCREASE WITH EFFECT FROM MAY 1, 1972

Benefit category - By monthly wage/salary range (Taka)	Rate of increase (Taka per month)
Upto 125	25
126-225*	20
226-335*	15
336-349	Marginal adjustment

* Persons in this category getting a minimum of Taka 150 per month.
**Persons in this category getting a minimum of Taka 245 per month.

10. The market price of jute was, however, on average, more than Taka 50 since early 1972 (see Monthly Jute Goods Statistics, BJMA Nos. 192 and 193).

11. This seems to be a reasonable assumption in view of dislocated market conditions and transportation difficulties in the post liberation period.

12. In early 1969, the minimum wage was fixed at Taka 125.

Assuming that the average wage and salary levels before the raise were respectively Taka 125 and 250, the implied percentage increase in wages and salaries, on average, would be 20% and 6% respectively. However, in addition to wages and salaries, bonuses and other allowances are received by employees, which show up in wage/salary cost of production. Assuming a proportional increase in bonuses and allowances paid, the wage and salary cost per ton of goods produced would now be 20% and 6% higher respectively than in 1969-70 provided labour productivity is the same in the two periods.

3. Increase in depreciation cost due to devaluation - 66% in aggregate, depreciation charge practice remaining the same. Hence, per ton of goods produced, depreciation cost should be higher now by 66% relative to 1969-70 for comparable output levels for given mill sizes.

4. Increases in the prices of spares, ranging from moderate to manyfold. Interviews with officials of some jute mills have revealed that, on average, the percentage increase in the prices of spares during July-December 1972 relative to 1969-70 was about 75%. Assuming comparable physical consumption of spares per ton of goods produced in the two periods, spares cost per ton should now go up by 75% relative to 1969-70.

The prices of direct materials other than jute, viz., jute batching oil, emulsifier, fuel and power etc., during July-December 1972 remained about the same as in 1969-70. So also, interest rates, tax rates and insurance premium rates remained

unchanged. For comparable output levels for given mill sizes, these costs per ton of goods produced should remain about the same.

There is no clue to quantify the change, if any, in other expenses, e.g. welfare expenses, incidentals etc., per ton of goods produced that should take place due to changed circumstances in the post liberation period.

Regarding administrative and selling expenses, there should probably be some reduction in the post liberation period relative to 1969-70 in aggregate for a given mill size and, hence, per ton for comparable output levels in the two periods due to salary cut at the top. For the purposes of our calculations, however, we shall assume that per ton administrative and selling expenses in the post liberation period would be the same as in 1969-70 for comparable output levels for given mill sizes.

Now, adjustments, as outlined above, performed on 1969-70 costs yield the notional cost levels, as shown in table 8, for the post liberation period given 1969-70 levels under the assumption that the productive efficiency and the capacity utilization levels were the same in the two periods.

It will be seen from table 8 that the actual cost levels of July-December 1972 were substantially higher than the computed levels for all the three products. It is unlikely that the computed cost levels without the 5% contingency provision could have underestimated possible increases given the exogenous cost push elements as outlined above, other things remaining constant. Yet, even if

TABLE-8

(NOTIONAL) POST-LIBERATION COST LEVELS AS OBTAINED BY ADJUSTMENT FROM 1969-70 COSTS(TAKA PER TCN)

Product	Cost levels July--December 1972		Excess of column 3 over column 2	Column 4 as percent of column 2	Column 4 as percent of column 3
	Computed from 1969-70 Costs	Actuals			
1	2	3	4	5	6
Hessian	3464.47 (3637.69)	4379.82	915.35 (742.13)	26.42 (20.40)	20.90 (16.94)
Sacking	2321.93 (2438.03)	2835.61	513.68 (397.58)	22.12 (16.31)	18.12 (14.01)
Carpet backing	4115.58 (4321.36)	5001.13	884.55 (678.77)	21.49 (15.71)	17.69 (13.58)

Figures in parentheses in column 2 have been obtained by allowing a 5% increase in aggregate in addition to adjustments outlined in text which yielded the other figures of the column; and figures in parentheses in other columns are based on figures in parentheses in column 2.

we were to allow the 5% contingency margin, there still remain substantial cost disadvantages in all the three productlines. It has thus, emerged that 16.9-20.9%, 14.0-18.1% and 13.6-17.7% of the actual cost levels of hessian, sacking and carpet backing respectively in this period are possibly due to poorer productive efficiency and lower capital utilization level. That the capacity utilization and productive efficiency were significantly down in the post-liberation period relative to 1969-70 can be seen from capacity utilization and productive efficiency indicators shown in table 9.

TABLE-9

CERTAIN CAPITAL UTILIZATION AND PRODUCTIVE EFFICIENCY INDICATORS FOR JULY-DECEMBER 1972 AND 1969-70

Indicator	Hessian		Sacking		Carpet backing		Hessian + sacking		Hessian + sacking + carpet backing	
	1969-70	1972	1969-70	1972	1969-70	1972	1969-70	1972	1969-70	1972
Worked looms as % of installed looms	90.67	84.95	88.28	73.97	78.05	68.87	89.88	80.97	89.31	80.00
Output per installed loom per year (ton)	17.25	13.88	44.77	33.54	26.37	21.60	39.04	28.46	25.74	21.00
Output per loom hour (lbs)	7.46	6.40	20.4	18.25	15.45	14.87	11.71	10.25	11.50	10.60
Output per man-year (ton)									4.44	3.48
Output per man-hour(lb)	2.70	2.01	7.41	5.72	5.60	4.66	4.17	3.21	4.24	3.32
Labour load per installed loom									2.46	2.55
Labour load per worked loom									2.76	3.19
Material wastage (percent)									6.2	9.8

Notes: 1. 1972 refers to July-December 1972.

2. All annual figures like output per man-year have been shown by doubling the July-December 1972 figures.

It will be noticed from table 9 that capacity utilization as well as efficiency in the use of labour, capital and raw materials were significantly lower in the post liberation period relative to 1969-70. It may be noted that labour productivity declined substantially more than loom productivity (21.7% as against 7.8% on hourly output basis), because labour load per worked loom was much higher in the post liberation period than in 1969-70 (3.19 as against 2.76), although, on installed loom basis, there was no alarming increase in labour force.

Circumstances responsible for poorer productive efficiency and lower capacity utilization level in the post liberation period relative to 1969-70 will be discussed and ways for reducing costs will be explored in section V. However, the computation of possible reduction in cost levels on the basis of 1969-70 figures incorporating exogenous factors on the assumption that productive efficiency and capacity utilization level of 1969-70 would obtain, is one possible exercise and perhaps the most ambitious proposition for the shortrun. To face realities, it is unlikely that the productive efficiency of 1969-70 will be quickly restored given the order and nature of dislocations that have occurred in the conditions of production management and production processes. It should, therefore, be an useful approach to look at the impact on cost levels of the post liberation period of an assumed increase in output levels through improvement in capacity utilization level as well as productive efficiency, the latter remaining lower than in 1969-70

but possibly more in line with realizeable improvement in the relevant conditions, and consequent likely reduction in costs.

AN EXERCISE IN COST REDUCTION UNDER ASSUMPTIONS REGARDING POSSIBLE INCREASE IN OUTPUT LEVELS THROUGH IMPROVEMENT IN CAPACITY UTILIZATION AND PRODUCTIVE EFFICIENCY.

Output per installed loom per year, on average for the three products, was about 22% higher in 1969-70 relative to July-December 1972. Let us assume that through improvement in productive efficiency and increase in capacity utilization it would be possible to raise the output per installed loom per year, and hence total output of each product, by 20%. This assumption does not seem overly optimistic given the very low level of capacity utilization and output per loom hour for each product in the post liberation period. Let us also make the following assumptions regarding consequent cost implications of the assumed output increase.

i) It is assumed that the 20% increase in output will bring about a percentage decline in wage and salary cost of one half of the percentage increase in output as extra paid man-hours may be required to raise the output.

ii) It is also assumed that the required general improvement of productive efficiency for the output to increase by 20% will allow a 10% decline in stores consumption.

iii) Regarding costs other than materials and the above two elements which may for simplicity be called 'fixed costs' but would contain some elements which may be variable, it is

assumed that percentage decline will be proportional to the increase in output.

iv) Finally, it is assumed that better waste control will allow a 3 percent decline in materials cost, as the wastage rate of 9.8% in the post liberation period is 3.6 percentage points relative to 1969-70.

Table 10 presents percentage cost composition of hessian, sacking and carpet backing, summarises the above assumptions regarding cost reduction, elementwise, and shows their overall implication on the cost levels.

TABLE-10

PER TON COST REDUCTION IMPLIED BY A 20% INCREASE IN OUTPUT AND OTHER ASSUMPTIONS

Product	Cost Structure	Percentage cost reduction		Total Actual cost levels (Taka)	Implied declines (Taka)	Reduced cost levels (Taka)
		elementwise	implied overall			
Hessian						
	Wage & salary	27.1	10	2.71		
	Stores:	5.5	10	0.55		
	Fixed costs:	25.3	20	5.06		
	Materials:	42.1	3	1.26		
	Total:	100.0		9.58	4379.82	419.59	3960.23
Sacking						
	Wage and salary:	23.3	10	2.33		
	Stores:	3.8	10	0.38		
	Fixed costs:	21.9	20	4.38		
	Materials:	51.0	3	1.53		
	Total:	100.0		8.63	2835.61	244.71	2590.90
Carpet backing						
	Wage & salary	21.7	10	2.17		
	Stores:	5.7	10	0.57		
	Fixed costs:	28.1	20	5.62		
	Materials:	44.5	3	1.34		
	Total:	100.0		9.70	5001.13	485.01	4515.12

41 lakh if the sample average working days of 145 with 2.46 shifts of 8 hours each per day is taken as the basis and 5% of the loom hours per shift is allowed as unavoidable loss. This loss of looms hours accounts for about 15% of the available loom hours compared to about 5% in 1969-70 similarly worked out, when the number of working days as well as the number of shifts per day were roughly comparable at 293 working days for the full year and 2.41 shifts per day. The main reasons for the loss of loom hours in 1969-70 were power failure, strikes and conversion of loomsbetween hessian and sacking, as revealed by our 1970 survey. It may be noted in passing, that loom hours lost is greater, in both absolute and percentage terms, in both the periods if more working days and more hours per day are taken to form the basis for available loom hours. Anyway, the percentage breakdown by reason of the loom hours lost during the actual working period over July-December 1972 for the sample is shown in table 11, and analysed below with suggestions for removing the bottlenecks.

TABLE-11

LOOM HOURS LOST BY REASON FOR THE SAMPLE, JULY-DECEMBER 1972(IN PERCENT OF THE TOTAL)

Reason	Percent
Mechanical troubles	22.53
Shortage of spares	19.04
Shortage of weavers	17.11
Power failure	13.75
Others	27.57
Total	100.00

Source: Sample Survey.

It will be noted that these estimates of reduced cost levels are significantly higher than those obtained by adjusting 1969-70 figures (table 8). The actual short term prospects may be somewhere in between, possibly nearer to the higher figures[13].

V. WAYS OF COST REDUCTION

It has been seen in the previous section that low capacity utilization and poor productive efficiency are major reasons for high costs in the post liberation period. Costs could, therefore, be reduced significantly through increase in capacity utilization and improvement in productive efficiency. The purpose of this section is to explore the circumstances responsible for the existing state of affairs and to suggest possible ways to bring about improvement so as to reduce costs.

A. CAPACITY UTILIZATION

Information on loom hours lost by reason is available in the monthly reports. The reasons shown are mechanical troubles, shortage of spares, shortage of weavers, power failure and 'others'. No loss of loom hours has been shown to be due to strike or labour troubles in any of the reports. Total loom hours shown lost for the sample is about 41 lakh during July-December 1972. Indeed, the loom hours lost would amount to about

13. It would have been an interesting sidelight if we could compare cost levels of jute goods in Bangladesh with those in India, but due to non-availability of reliable information on current cost levels in India, this could not be done in this paper.

The most important reason for underutilization of capacity has been found to be mechanical troubles, claiming 22.5% of the loom hours lost. The machinery in our jute manufacturing industry are not very old and the extent of loss of loom hours due to mechanical breakdown, as has been found, seems rather surprising. But the point is that skilled technicians were not available in sufficient number to provide normal attention to the machines as non-Bangali technicians left the industry on liberation. Another important reason (17.1%) for loss of loom hours was shortage of weavers. Again, the main reason for this is non-Bangali weavers leaving the industry. Such shortage of technicians and weavers cannot be allowed to continue and it is, therefore, warranted that stock taking of personnel of these categories and their proper deployment are taken up urgently and programmes are designed and implemented to fill up the gap.

Shortage of spare parts has claimed about 19% of loom hours lost. Most of the spare parts for the jute manufacturing industry are produced domestically, in many cases certain spares are produced in the workshops of the jute mills themselves. But, a few key spares have also to be imported. The reason for the nature of shortage as has occurred has been both the inability of the domestic ancillary production to provide the necessary supplies mainly for want of raw materials and also failure to ensure regular supplies of importable spares. For immediate needs, some adhoc arrangements may be made which may include block allotment of foreign exchange for import of spares and materials for

producing spares domestically. But to tackle the spares problem in proper perspective, the following two steps are called for. One, adequate government attention should be directed towards proper organisation and development of spares production in the country so that the supplies of those spares which are already produced domestically can be provided regularly as required and in good quality and the production of others can be taken up in due time. In view of the simple technology required, domestic production of spares can be efficient and will be cheaper in both foreign exchange and Taka terms. Secondly, it is necessary that arrangements are made for regular and timely importation of importable spares as necessary. In both the cases, the BJMC should play the vital role of moving the appropriate authorities with specific proposals after careful study and evaluation.

Power failure claimed about 14% of the loom hours lost[14]. One hopes that with planned improvement in the power system and in the distribution of power, power failure will become less frequent and less intensive claiming lesser toll in terms of lost production of industries. Indeed, the government should give a high priority in the matter of improvement of power supply to the industries.

---

14. It may be noted here that recently, following the period covered in this study, all the jute mills along with other industries remained closed in Khulna zone for about a month due to suspension of power. One hopes this was an isolated occurrence and may not happen again.

The remaining about 28% of the loom hours lost has been assigned to 'others'. Important elements included in 'others' are not all the same for all mills all the time. It is important that each mill constantly reviews these residual reasons causing underutilization of capacity and takes appropriate actions as required.

B. PRODUCTIVE EFFICIENCY

Poor productive efficiency in the post-liberation period is the result of several things, the more important ones of which are explained below with suggestions for improvement.

LABOUR SITUATION

Labour unrest and indiscipline became widespread in the immediate post liberation days. Although the situation improved significantly by the second half of 1972, cases of labour unrest and indiscipline continued to plague the industry intermittently. The case of Adamjee Jute Mills may be cited in this connection, where "go slow" policy continued throughout July-December 1972 and the mills remained closed for 8 days in the month of September. Also, the Qaumi Jute Mills remained closed for 5 days in October 1972 for strike. Labour troubles of varying duration and intensity also occurred in various other mills[15].

A good general atmosphere in factories should be as jealously guarded as possible by both the management and the workers for

---

15. Ref., Bangladesh Jute Mills Corporation, Year 1972.

the good of both the parties as well as the country. Indeed, if the situation degenerated for whatever reasons, as happened in the post-liberation Bangladesh, promotion of industrial peace and harmony can be achieved only through sincere efforts on the part of both the management and the workers. As one of the fundamental reasons the present industrial unrest in Bangladesh is the workers' expectation of higher wages and better conditions of work, a good starting point may be an wages and productivity agreement between the management and the workers. Any review of wages should be linked up with the question of productivity if a sound basis of recovery and eventual growth of the industry is to be ensured. Any agreement should be worked out through discussions and negotiations between the representatives of the two parties. If their full cooperation is to be obtained, workers should be a party to the fixation of wage rates and desired productivity levels. The government, being ultimately responsible for the management of the nationalised jute manufacturing industry, should make necessary efforts in this direction. It is a step in the right direction that the government has recently set up a committee to make recommendations on industrial wage rates. The committee should also consider the question of desirable productivity levels. Such a committee itself may include representatives of workers. Total wages payable to a worker pay consist of a basic wage part and an allowance and bonus part. While the basic wage structure may be the same for all industries, it may not be desirable to have the same total wages structure and the same

productivity levels for all the industries. The committee may suggest a uniform basic wage structure for the industrial sector as a whole and general norms regarding allowances and bonuses with desirable deviations to be allowed in them in different industries depending on conditions of work and other relevant considerations. However, whatever may be the constitution of the expert committee, it would seem advisable that, armed with the recommendations of the committee, the government hold discussions and negotiations with the representatives of workers of each industry separately to work out with them an wages and productivity agreement for each particular industry. This will give the workers a sense of participation and they will be more likely to fulfil their part of the deal. Moreover, workers' participation in management is also desirable to give them a sense of belonging and thereby induce them to give their best efforts in jobs. The form and manner of their participation should be carefully worked out keeping in view proper and smooth functioning of the industry. Again, the workers should be a party to the final decision on the form and manner of their participation in the management of the firms they work in as this will certainly improve the chances of success of the scheme.

In so far as it is the law and order question, the government should take necessary steps to restore the rule of law.

SUPERVISION

Supervision of production processes has deteriorated significantly in the post-liberation period, perhaps mainly for want of skilled supervisors who were already in short supply even before liberation and became even more scarce due to non-Bangali supervisors leaving the industry. Supervision has also deteriorated due to conditions of lawlessness in the mills with intergroup rivalries and other incompatibilities creating hostile atmosphere.

Lack of proper supervision may mean the use of faulty jute batch, inadequate preparation of jute, irregular oil application and less than adequate attention to jobs generally resulting in high wastage rate and faulty products. The wastage rate of 9.8% during July-December 1972 as against 6.2% in 1969-70 indicates deterioration of supervision in the post liberation period. The rate of weaving faults has also reportedly gone up.

For one thing, if steps are taken to improve the atmosphere in the mills promoting industrial peace and harmony, some improvement in the quality of jobs done will result. But, to ensure a high standard of product quality and reduce wastage rate to the minimum, the quantity and quality of supervision must be sufficiently increased. This will be possible only if skilled supervisors in sufficient number are available. It is, therefore, necessary that programmes are undertaken to train supervisors and deploy the available ones in the most effective manner.

QUALITY CONTROL

This was one of the weakest aspects of the Bangladesh jute manufacturing industry even before the liberation. After liberation, the situation has further deteriorated. A survey by the Bangladesh Jute Mills Corporation in late 1972 revealed that quality control department existed only in 12 out of 73 mills and, in many cases, very ineffectively. Mills lack necessary testing equipments and qualified and experienced personnel.

In order to ensure efficiency in the production processes, it is essential that there is a properly equipped and manned quality control department in each mill to check if things are done properly. To be effective, the quality control department should be independent of the production unit under the direct control of the Chief Executive of the mill. The BJMC has recently taken steps to establish a quality control department in each mill and to equip it with necessary testing equipments and qualified personnel. Arrangements have been made with the Management Development Centre to conduct special courses for newly recruited quality control personnel in the mills. This is a step in the right direction. Success will depend, however, on how carefully and realistically the programme is planned and how effectively it is implemented. The BJMC itself has a Research and Quality Control Division to help the mills sort out their problems, help them establish effective quality control departments and to keep watch on their performance in this area. The division is still in the early stages of organization and one hopes that due emphasis will be given to the proper development and manning of

this division so that it can effectively perform its functions.

INVENTORY CONTROL

The concept of inventory control is almost unknown in our jute manufacturing industry, as was revealed by the 1970 survey and recent enquiries. An effective inventory control system is a highly useful cost control method. A comprehensive inventory control system should cover all aspects from raw materials to the finished goods through each stage in the production process as well as spare parts. Steps should be taken to design an appropriate inventory control system for the industry. In the mean time each mill should try to avoid carrying of unnecessarily large or less than adequate inventories as best and as comprehensively as possible - a primary focus may be possible cutting down on less frequently used spares to avoid unnecessary costs of carrying them and maintaining adequate stocks of frequently used spares to avoid unnecessary costs that may be involved in having to acquire them quickly on need.

C. NORMS, INTER-FIRM COMPARISON AND PERFORMANCE OF MILLS

The main causes of low capacity utilization and poor productive efficiency and, therefore, high costs of production have been identified. Possible actions have also been suggested for solving the problems. In order to make systematic progress, it will be extremely useful if performance norms for the industry are set up in respect of productivity, costs, financial matters, export etc., which may be worked out on the basis of past

experiences in the country, experiences in other countries and detailed studies of the present realities. With norms set up, the current performance levels of each mill may be checked against them and each mill may be required to take steps to improve in those areas where it falls behind.

A more far-reaching and helpful method of appraising the performance of firms to help them improve their functional efficiency is available in the technique of Inter-firm comparison, which consists in the evaluation of the performance of each firm in relation to that of every other participating firm as well as average achievements of the whole group and also set norms, if available. This is done by a simultaneous study of the performance of different firms in an industry or business through juxtaposition of their performance data. However, the actual data pertaining to a firm need not be disclosed to others, if undesirable, as only ratios and percentages appear in the reports. This comparative evaluation aims at locating the problem areas and weak points of individual firms and identifying the reasons therefor to help design necessary corrective steps so as to remove the bottlenecks and improve the functional efficiency and, thereby, the profitability of firms.[16] Carefully designed, it can

16. For further details see 1. Inter-Firm Comparison - An Incentive To Productivity, OEEC, Paris (December 1957) and 2. Inter-Firm Comparison - Problems and Possibilities in India, The Department of Business Management and Industrial Administration, University of Delhi (1965).

provide an effective forum for promotion of co-operation among firms in efforts for progress. This technique is widely used in Western European countries, the USA and Australia, where private sector concerns found it useful enough to participate in such programmes conducted whether by Private Consultants (e.g. in the USA) or by Professional Organisations (e.g. in U.K.) or by Government Departments (e.g. in Australia). In Bangladesh, the technique is almost unknown.

As the Bangladesh jute manufacturing industry is a nationalised institution, inter-firm comparison of jute mills can be arranged easily, on government initiative, without resistence from mills as the question of mill level secrecy of performance data is irrelevant. The Bangladesh Jute Mills Corporation is certainly the most suitable organisation to conduct inter-firm comparison of jute mills. It can be a six monthly or, perhaps, even three monthly feature. Initially, certain key performance indicators in respect of productivity, cost, financial matters, exports, etc., may be selected for comparison and each mill required to submit the relevant information as per prescribed time schedule. With experience, more indicators may be included and/or some dropped. Once the problem areas and weak points of a firm are identified, further study of the mill will be needed to ascertain the reasons therefor and design corrective measures, which can be done by the mill management with help from BJMC staff.

VI. COSTS, PROFITABILITY, EXPORT PRICES AND THE EXCHANGE RATE

We have explored the possibilities and ways of cost reduction in the previous two sections. This section will relate cost levels, actual and possible reduced, to foreign demand conditions to explore the viability of the industry vis-a-vis the exchange rate.

Table 12 presents the behaviour of cost of sales, export prices and quantum export of hessian, sacking and carpet backing in July-December 1972 relative to 1969-70.

TABLE 12

CHANGES IN EXPORT PRICES, COST OF SALES AND EXPORT VOLUMES BY PRODUCT.. JULY-DEC. 1972 RELATIVE TO 1969-70

Product	1969-70			July-December 1972			% change in July-Dec. 1972 relative to 1969-70		
	Export price (US $)	Cost of sales (Taka)	Quantity exported (ton)*	Export price (US $)	Cost of sales (Taka)	Qnty. exported (ton)	Exported price	Cost of sales	Qnty. exported
Hessian	400.09	2546.08	102119	517.39	4379.82	75252	+29.32	+72.02	-26.31
Sacking	218.05	1720.36	116019	351.73	2835.61	86946	+61.31	+64.83	-25.06
Carpect backing	575.90	3004.15	16071	634.16	5001.13	31149	+10.12	+66.47	+93.82

* Average half yearly figures.

It will be noticed from table 1.. that, given foreign demand conditions, higher prices were responsible for lower exports of hessian and sacking during

July-December 1972 relative to 1969-70, as supplies were no constraint (Appendix table-4)[17]. The situation was relatively worse for hessian than for sacking as, in the former case, the percent increase in prices was associated with about proportional decline in exports while, in the latter, the decline was somewhat less than one half of the percent increase in prices. In the case of carpet backing, however, exports almost doubled in the face of a 10% higher price, which would suggest that there was strong foreign demand for carpet backing during July-December 1972. In the case of hessian and sacking, it is possible that foreign demand would not have been a constraint if percentage price increases were of similar order as in the case of carpet backing. But since in all the three productlines losses were incurred during the period at existing cost and price levels, any lowering of prices would have meant larger losses for any productline, per unit and total. Therefore, the question of export expansion through lower prices is irrelevant with cost levels remaining where they are and exchange rate unchanged.

At this stage, it will be interesting to review the implication of the devaluation vis-a-vis the withdrawal of the export

17. One may, however, legitimately argue that there was a constraint on the supply side in the form of internal transport and steamer space difficulties which was responsible for lower exports to some extent given foreign demand at existing prices. But, we do not have enough quantitative information to ascertain its actual impact. Anyway, it seems certain that lower demand at the prices charged was an important reason for lower exports during July-December 1972.

bonus scheme. In the pre-liberation period, because of the bonus, prices could be kept at low levels even below cost of sales, and yet profits could be earned. The 1969-70 situation in this respect is shown in table 13.

TABLE-13

PER TON COST OF SALES, EXPORT PRICE AND PROFIT IN RESPECT OF JUTE GOODS, 1969-70 (TAKA PER TON)

Product	Cost of sales	F.O.B. receipts	Bonus	Total receipts	Profit
Hessian	2546.08	1904.42	972.24	2876.64	330.56
Sacking	1720.36	1037.94	540.76	1578.70	-141.66
Carpet backing	3004.15	2741.31	1354.56	4095.87	1091.72
Weighted* Average	2172.44	1538.02	787.29	2325.31	152.87

*Weights are proportional to quantities exported of different products.

But, as shown in table 14, the devaluation from Taka 4.76 to Taka 7.60 to the US dollar has, other things remaining the same, more than sufficiently compensated for the withdrawal of the bonus from the export of jute manufactures as the effective exchange rate for these goods in 1969-70 was Taka 7.20 to the dollar. This means that export prices in the post devaluation period in terms of dollar equal to 1969-70 levels would imply somewhat higher receipts in Taka terms so that the industry should be more profitable without the export bonus after devaluation even if export prices were as low as 1969-70 levels provided cost levels of 1969-70 could be maintained.

TABLE-14

EFFECTIVE EXCHANGE RATES FOR JUTE GOODS EXPORTS, 1969-70

Product	F.O.B. Receipts (Taka)	F.O.B. receipts in US $ (Col.2 ÷ 4.76)	Total receipts (Taka)	Effective exchange rate-Taka to the US $(Col.4÷ Col.3)
1	2	3	4	5
Hessian	1904.42	400.09	2876.64	7.19
Sacking	1037.94	218.05	1578.70	7.24
Carpet backing	2741.31	575.90	4095.87	7.11
Weighted* Average	1538.02	323.11	2325.31	7.20

*Weights are the same as in table 13.

Now that costs of sales could not possibly be brought back to 1969-70 levels, the realities regarding export prices, profitability and exchange rate are different. Given either that cost levels could not be reduced at all or that they could be reduced around the levels suggested by our calculations or to any other reasonable levels, the question to explore is the implied exchange rate for export prices which are likely to sustain export levels to be maintained if profit should be greater than or at least not less than zero.

In recent working documents of the World Bank, it has been shown that, in the world market, for all the three jute products of hessian, sacking and carpet backing, a one percent decline in the price of the jute product relative to the price of synthetic substitutes is associated with a roughly two percent increase in the quantity demanded. Although, when the world demand curve

elasticity is - 2, exports from Bangladesh may face a more price sensitive demand curve, it will be assumed, as is done in the World Bank documents, that the World demand curve elasticity of - 2 applies to Bangladesh. While prices of jute goods tended to rise since late 1960's, particularly since 1970, reaching a post Korean war peak in 1972, the prices of polypropelene showed a significant downward trend, resulting in a heavy price differential disadvantage for jute goods by 1972. Given this background, it may be assumed that prices of jute goods can be lowered significantly without inducing retaliatory price cuts for synthetic substitutes in the short run. Let us assume that prices of synthetic substitutes will remain more or less constant in the coming few years irrespective of what happens to the prices of jute goods so that a one percent decline in the price of a jute good will lead to a two percent increase in its export demand. Let us further assume that exports of hessian and sacking from Bangladesh should be raised at least to 1969-70 levels and that of carpet backing by about 10% from July-December 1972 level. To achieve this will require price decreases as shown in table 15.

TABLE - 15

PRICE DECREASES REQUIRED FOR ASSUMED DEGREE OF EXPORT PROMOTION GIVEN A PRICE ELASTICITY OF EXPORT DEMAND OF-2.

Product	Percent increase of export.	Percent decrease in export price	Actual export price	Reduced Export price	
				Taka	US $ (Tk.7.6 = 1 $)
Hessian	35.70	15.85	3932.19	3230.29	425.04
Sacking	33.44	16.72	2673.21	2226.25	292.93
Carpet backing	10.00	5.00	4819.73	4578.74	602.47
Weighted Average*:				2951.73	388.39

*Weights are the same as in table 16.

The breakeven Taka export prices and prices needed for a profit margin of 5% for the actual cost levels as of July-December 1972 and various estimates of reduced costs are shown in table 16.

TABLE 16

TAKA EXPORT PRICES FOR BREAKEVEN AND A 5% PROFIT MARGIN FOR JULY-DECEMBER 1972 ACTUAL COST LEVELS AND POSSIBLE REDUCED COST LEVELS AND IMPLIED EXCHANGE RATE GIVEN REDUCED EXPORT PRICES SHOWN IN TABLE 15

Product	Breakeven				5% profit margin			
	1969-70 based reduced cost levels		July-Dec. 1972 based cost levels		1969-70 based reduced cost levels		July-Dec. 1972 based cost levels	
	Without the 5% contingency provision	With the 5% contingency provision	Reduced	Actual	Without the 5% contingency provision	With the 5% contingency Provision	Reduced	Actual
1	2	3	4	5	6	7	8	9
1.Hessian	3464.47	3637.69	3960.23	4379.82	3637.69	3819.57	4158.24	4598.81
2.Sacking	2321.93	2438.03	2590.90	2835.61	2438.03	2559.93	2720.45	2977.39
3.Carpet backing	4115.58	4321.36	4515.12	5001.13	4321.36	4537.43	4740.88	5251.19
4.Weighted Average*	3027.59	3178.98	3406.05	3754.26	3178.98	3337.93	3576.35	3941.98
5.Implied exchange rate (Row 4 ÷ $388.39)	7.80	8.19	8.77	9.67	8.19	8.59	9.21	10.15

Source: Tables 8, 10 and 15

* Weights are proportional to the target exports of hessian, sacking and carpet backing, on the assumptions made, of [illegible] 232038 and 68528 tons per annum.

It seems rather far fetched that costs can be reduced to the levels implicit in export prices shown in columns 1 and 6[18]. The more hopeful preposition may be cost levels implicit in export prices in columns 4 and 8, with those implicit in figures in columns 3 and 7 as possible targets. If cost levels could be reduced as implicit in export prices shown in columns 4 and 8, even for breakeven purposes, the exchange rate for the jute manufacturing industry may have to be of the order of Taka 8.77 to the dollar and to allow a meagre 5% profit margin, on average, the exchange rate may have to be about Taka 9.21 to the dollar. If the cost levels are not reduced at all, the dollar value should be as high as Taka 9.67 for breakeven and Taka 10.15 for a 5% profit margin. Keeping the problems and prospects in view, an exchange rate of about Taka 9.50[19] to the dollar may be a good bet, which will give the industry just short of breakeven conditions at the current cost levels and supply clearing export prices, requiring the industry to make all out efforts to reduce costs at least to the levels implicit in export prices shown in columns 4 and 8, which are the same as figures shown in column 4, so as to achieve a comfortable profit margin. It should be borne in mind that this suggestion depends on all the assumptions made in the analysis and should, therefore, be treated as only a rough guide.

18. Obviously, the figures in columns 2 to 4 are the various reduced cost estimates and those in column 5 are actual costs of July-December 1972.

19. It may be noted here that this rate is significantly less than the rate allowed for remittances from abroad by Bangalis earning there. The rate allowed for pound sterling remittances is Taka 30 to one pound sterling which gives a rate of about Taka 12 to one US dollar (converted on the basis of Taka 18.97 = one pound sterling and Taka 7.60 = one US dollar).

VII. CONCLUDING REMARKS

It has been seen that the jute manufacturing industry is incurring substantial losses in the post liberation period. The loss per ton of goods produced and exported is, on average, about Taka 300; and the per month loss of a mill of 250 looms, the most common size, has been calculated to be of the order of Taka 0.95 - 1.61 lakh. The main reason for the losses lies in disproportionately high costs of sales.

It has been seen that, due to certain exogenous changes, cost levels would be higher in the post liberation period relative to 1969-70, the comparison base used, even if capacity utilization level and productive efficiency would be the same in the two periods. It has also been seen that capacity utilization level and productive efficiency were substantially lower in the post liberation period and it has been suggested that possibilities of cost reduction through improvement in capacity utilization and productive efficiency do exist, there being no improvement in the exogenous conditions. Suggestions have been made for bringing about improvement in capacity utilization and productive efficiency and, thereby, cutting down on costs. It should be pointed out that reduction in the price of jute, which is the most important cost element accounting for over 40% of total costs, is unlikely to occur in the coming few years. Only chance of there ever being any possibility of reduction in the price of jute may be through improvement in the yield rate and reduction in the cost of production of jute; and, to be sure, this will take a number

of years to come about, if at all, if efforts are directed to that end. Even in the event of this happening, political climate will be the main determinant of any possible reduction in the price of jute, if not the deterrent. Anyway, it should be borne in mind that the overall jute policy should include the improvement in the yield rate and reduction in the cost of production of jute.

It has also been seen that if export is to be promoted to at least 1969-70 levels for hessian and sacking and to a reasonable level for carpet backing, it would be necessary to reduce export prices. By relating the 'derived' export prices for this purpose to cost levels, actual and possible reduced, it has been suggested that if the industry is, first, to recover and, then, to proceed to be profitable, the exchange rate for the industry may have to be raised, perhaps to the level of Taka 9.50 or so to the US dollar, inspite of all necessary steps taken for improving capacity utilization and productive efficiency of the industry.

The Bangladesh Jute Mills Corporation has a strategic role to play for the recovery and progress of the industry. The Corporation should first identify the main problems of the industry and, then, take all necessary steps to solve them. Certain things that the Corporation can do has been pointed out. The Corporation should undertake crash programmes to solve the problem of shortage of technicians, supervisors and woavers. The Corporation should also see that properly designed quality control and inventory control systems are established in the mills. Inter-firm comparison technique may be used to help mills locate

their problem areas and weak points and design appropriate steps to improve things.

Finally, it may be noted that only the question of traditional products has been explored in this paper. Indeed, alternative uses of jute also deserves a serious attention for a better future of the industry, but this is outside the scope of the present study.

APPENDIX

TABLE-1

NUMBER OF JUTE MILLS IN COMMISSION IN BANGLADESH BY PRODUCTS AND THE COVERAGE OF MILLS IN THE SAMPLES, July-December, 1972 and 1969-70

Product	Number of Mills			
	July-December 1972		1969-70	
	Industry	Sample	Industry	Sample
1. Hessian, sacking and carpet backing	18	11	11	4
2. Hessian and Sacking only	34	9	34	8
3. Carpet Backing only	14	2	1	0
4. Spinning only	5	0	6	0
5. Cotton Bagging only	2	0	0	0
6. Total (1+2+3+4+5)	73	22	52	12
7. Hessian and Sacking along with or without Carpet backing (1+2)	52	20	45	12
8. Carpet backing along with or without hessian and sacking (1+3)	32	13	12	4

SOURCE: Sample Surveys and BJMA.

TABLE-2

INSTALLED LOOMAGE, OUTPUT AND EXPORT BY PRODUCT IN THE INDUSTRY AS A WHOLE AND IN THE SAMPLES, JULY-DECEMBER 1972 AND 1969-70.

Product	July - December 1972						1969-70					
	Loomage (Number)		Output (Ton)		Export (Ton)		Loomage (Number)		Output (Ton)		Export (Ton)	
	Industry (I)	Sample (S)	I	S	I	S	I	S	I	S	I	S
Hessian	14,062	5,580	82,698	38,746	75,252	35,875	13,849	3,817	2,34,608	65,831	2,04,237	58,866
Sacking	7,959	3,170	117,150	53,159	86,946	34,822	6,994	1,903	2,97,361	81,394	2,32,038	66,589
Carpet-backing	2,034	754	26,970	10,789	31,149	10,891	784	287	33,008	11,204	32,142	9,742
Others	198	None	12,792	None	..	None	..	None	..	None	..	None

Source: BJMA (Monthly Jute Goods Statistics, July 1972 for 1969-70 and Statistics Section for July - December 1972) and our Sample Surveys.

TABLE-3

LOOMS HOURS WORKED, MAN HOURS WORKED, AVERAGE DAILY EMPLOYMENT, AVERAGE WORKING DAYS AND AVERAGE NUMBER OF SHIFTS PER DAY FOR THE SAMPLES.

July-December 1972 and 1969-70

	July-December 1972	1969-70
Loom Hours Worked		
Hessian:	1,35,55,414	1,97,73,202
Sacking:	65,25,876	89,10,161
Carpet Backing:	16,25,152	16,24,751
TOTAL:	2,17,06,442	3,03,08,114
Man Hours Worked		
Hessian:	4,32,41,771	5,45,74,038
Sacking:	2,08,17,544	2,45,92,044
Carpet Backing:	51,84,235	44,84,313
TOTAL:	6,92,43,550	8,36,50,395
Average Daily Employment:	59,627	35,699
Average Working Days:	145	293
Average Number of Shifts Per Day:	2.46	2.41

Source: Sample Surveys.

TABLE-4

SUPPLY AND DISTRIBUTION OF HESSIAN, SACKING AND CARPET BACKING, JULY - DECEMBER 1972.

(in Tons)

Product	Supply			Distribution			
	Stocks as of 1.7.72	Production during July-Dec. 1972	Total Supply	Export	Local Sales	Total Sales	Stocks as of 31.12.72
Hessian	53,355	82,698	1,36,053	75,252	2,764	78,016	58,037
Sacking	35,675	1,17,150	1,52,825	86,946	12,760	99,706	53,119
Carpet Backing	8,609	26,970	35,579	31,149	-	31,149	4,430
Total	97,639	2,26,818	3,24,457	193,347	15,524	208,871	115,586

Source: BJMA.

TABLE - 5

COST STRUCTURE BY PRODUCT, JULY-DECEMBER, 1972

Cost Items	Hessian		Sacking		Carpet backing	
	Taka/ton	%	Taka/ton	%	Taka/ton	%
Direct Materials:						
i) Raw Jute	1725.57	39.40	1374.92	48.49	2050.75	41.00
ii) Others	119.84	2.74	72.06	2.54	172.51	3.45
A. Total:	1845.40	42.14	1446.98	51.03	2223.26	44.45
Conversion Cost:						
i) Wages	914.01	20.87	479.79	16.92	818.80	16.37
ii) Salaries	273.20	6.24	179.49	6.33	268.60	5.37
iii) Sub-Total (i+ii)	1187.21	27.11	659.28	23.25	1087.40	21.74
iv) Fuel and Power	134.19	3.06	63.99	2.26	148.80	2.98
v) Stores Consumption	241.41	5.51	108.23	3.82	286.29	5.72
vi) Depreciation	288.69	6.59	136.25	4.80	497.71	9.95
vii) Others	376.40	8.59	205.79	7.26	467.46	9.35
viii) Sub-Total (iv+...vii)	1040.69	23.76	514.26	18.14	1400.26	28.00
B. Total Conversion Cost	2227.90	50.87	1173.54	41.39	2481.66	49.74
C. Total Manufacturing cost (A + B)	4073.29	93.00	2620.52	92.41	4710.92	94.19
D. Admn. Expenses	233.53	5.33	149.70	5.28	206.81	4.14
E. Selling Expenses	73.00	1.67	65.39	2.31	83.58	1.67
F. Total Cost of Sales (C+D+E)	4379.82	100.00	2835.61	100.00	5001.31	100.00

Source: Sample Survey.

TABLE-6

COST STRUCTURE BY PRODUCT, 1969-70

Cost Items	Hessian		Sacking		Carpet backing	
	Taka/ton	%	Taka/ton	%	Taka/ton	%
Direct Materials						
i) Raw Jute:	1037.59	40.75	751.15	43.66	1234.26	41.09
ii) Others:	72.10	2.83	51.01	2.97	87.39	2.90
A. TOTAL:	1109.69	43.58	802.16	46.63	1321.65	43.99
Conversion Costs:						
i) Wages:	533.99	20.97	357.79	20.80	609.58	20.29
ii) Salaries:	147.88	5.81	84.39	4.91	101.83	3.39
iii) Sub-Total(i+ii)	681.87	26.78	442.18	25.70	711.41	23.68
iv) Fuel an d Power	117.98	4.63	60.38	3.51	128.85	4.29
v) Stores	141.37	5.55	63.76	3.71	199.43	6.64
vi) Depreciation	168.40	6.61	82.73	4.81	211.47	7.04
vii) Others	160.24	6.29	109.56	6.37	235.50	7.84
viii) Sub-Total(iv+....,vii)	587.99	23.09	316.43	18.39	775.25	25.81
B. Total Conversion Cost:	1269.86	49.88	758.61	44.09	1486.67	49.49
C. Total Manufacturing Cost (A + B):	2379.55	93.46	1560.77	90.72	2808.31	93.48
D. Administration Expenses:	127.51	5.01	121.98	7.09	157.15	5.23
E. Selling Expenses:	39.02	1.53	37.61	2.19	48.68	1.29
F. Total Cost of Sales (C+D+E):	2546.08	100.00	1720.36	100.00	3004.15	100.00

Source: Sample Survey.

TABLE-7

PER TON SALE VALUE, JULY - DECEMBER 1972 AND 1969-70.

(in Taka)

Product	July-December 1972	1969-70		
	Total Receipts(=Fob)	Fob	Bonus	Total
Hessian	3932.19	1904.42	972.24	2876.64
Sacking	2673.21	1037.94	540.76	1578.70
Carpet backing	4819.71	2741.31	1354.56	4095.87

Source: Sample Surveys.